

CLAIMS

1. An ultrasonic probe, comprising: an ultrasonic element for transmitting and receiving an ultrasonic signal; a signal line for transmitting an electric
5 signal to or from the ultrasonic element; and a ground line for supplying a ground potential to the ultrasonic element, the ultrasonic probe further comprising:
a sensor signal substrate and a sensor ground substrate connected electrically with the ultrasonic element; and
10 a cable substrate for electrically connecting the sensor signal substrate and the sensor ground substrate with the signal line and the ground line, respectively,
wherein the sensor ground substrate and the cable substrate are connected directly or via a relay ground substrate.
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2. The ultrasonic probe according to claim 1, wherein at least a part of the sensor signal substrate is covered with the sensor ground substrate or the relay ground substrate.
- 20 3. The ultrasonic probe according to claim 1, wherein at least a part of the cable substrate is covered with the sensor ground substrate or the relay ground substrate.
4. The ultrasonic probe according to claim 1, wherein a connecting portion
25 between the sensor signal substrate and the cable substrate is covered with the sensor ground substrate or the relay ground substrate.
5. The ultrasonic probe according to claim 1, wherein at least a part of the ultrasonic element is covered with the sensor ground substrate or the relay
30 ground substrate.

6. The ultrasonic probe according to claim 5, wherein an ultrasonic wave transmitting/receiving surface of the ultrasonic element is covered with the sensor ground substrate or the relay ground substrate.
- 5 7. The ultrasonic probe according to claim 6, wherein the ultrasonic wave transmitting/receiving surface and peripheral surfaces of the ultrasonic element are covered with the sensor ground substrate or the relay ground substrate.
- 10 8. The ultrasonic probe according to claim 6, wherein a plurality of grooves are formed in a portion of the sensor ground substrate or the relay ground substrate that covers the ultrasonic wave transmitting/receiving surface of the ultrasonic element, the grooves dividing the ultrasonic element electrically into a plurality of oscillators.